

## Message Text

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ACTION EA-09

INFO OCT-01 EUR-12 ISO-00 CU-02 OES-07 CIAE-00 DODE-00  
PM-05 H-01 INR-07 L-03 NSAE-00 NSC-05 PA-01  
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INFO USLO PEKING  
/AMEMBASSY TAIPEI 772  
AMEMBASSY TOKYO  
AMEMBASSY PARIS

C O N F I D E N T I A L HONG KONG 89227

NOFORN

EO 11652: GDS  
TAGS: TGEN, ETRD, ESTC, CH, US  
SUBJECT: PRC UPGRADES SCIENTIFIC RESEARCH: COMPUTERIZED  
INFORMATION SYSTEM TO LINK PRC RESEARCH CENTERS

1. SUMMARY: THE PRC ENVISIONS ESTABLISHING A NATIONWIDE  
COMPUTER INFORMATION AND DATA NETWORK LINKING ITS  
SCIENTIFIC AND TECHNOLOGICAL RESEARCH CENTERS. WHILE THE  
OPTIMIM SYSTEM WOULD INVOLVE TECHNOLOGY PRESENTLY SUBJECT  
TO COCOM RESTRICTIONS, THE POSSIBILITY EXISTS THAT CHINA  
COULD ACHIEVE THE SAME CAPABILITY BY UTILIZING COMPUTERS  
OF A LESS SOPHISTICATED NATURE. OTHER MAJOR PROJECTS  
FOR THE ADVANCEMENT OF SCIENTIFIC RESEARCH IN CHINA,  
INCLUDE UPGRADING THE SCIENTIFIC INSTRUMENT INDUSTRY,  
ESTABLISHING A COMMON SYSTEM OF MEASUREMENT AND  
STANDARDIZATION, AND CREATING A NEW PROGRAM TO EDIT AND  
PUBLISH BOOKS REQUIRED FOR SCIENCE AND TECHNOLOGICAL  
WORK.

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2. ACCORDING TO CH'EN HSUEH-SEN, CHINA'S LEADING  
ROCKET SPECIALIST AND DIRECTOR OF THE INSTITUTE OF MECHANICS,  
CHINESE ACADEMY OF SCIENCES, ONE OF THE PRC'S TOP  
PRIORITIES TO ENHANCE SCIENTIFIC DEVELOPMENT IS THE  
ESTABLISHMENT OF A COMPUTER-LINKED NATIONAL INFORMATION  
AND DATA NETWORK FOR ON-LINE MASS STORAGE AND HIGH-SPEED  
TRANSMISSION OF SCIENTIFIC AND TECHNICAL INFORMATION.

IN AN ARTICLE WRITTEN FOR RED FLAG, NO. 7, JULY 4, 1977, CH'EN NOTED THAT THE PROPOSED INFORMATION AND DATA PROCESSING SYSTEM WOULD INCLUDE TERMINAL VIDEO SCREENS AND ANCILLARY PERIPHERAL EQUIPMENT AT EACH SCIENTIFIC AND TECHNICAL RESEARCH CENTER. THE DATA TRANSMISSION NETWORK WOULD UTILIZE EXISTING COMMUNICATION CIRCUITS AND WOULD PROVIDE SCIENTISTS THROUGHOUT THE COUNTRY IMMEDIATE ACCESS TO AVAILABLE DATA.

3. ACCORDING TO A US COMPUTER SYSTEMS EXPERT BASED IN HONG KONG, THE CHINESE PROBABLY ARE CONSIDERING AT LEAST TWO TYPES OF DATA HANDLING AND STORAGE SYSTEMS. THE OPTIMAL SYSTEM PROBABLY WOULD BE A CENTRALIZED COMPUTER SIMILAR TO THE IBM 158, TOGETHER WITH THE NECESSARY SOFTWARE AND MASS STORAGE UNIT. THE COMPUTER CENTER WOULD BE LINKED TO INDIVIDUAL TERMINALS HAVING VIDEO DISPLAYS AND POSSIBLY SOME DATA MANIPULATION CAPABILITY. IN LIGHT OF EXISTING EXPORT CONTROLS, HOWEVER, THE CHINESE MAY CONSIDER AN ALTERNATIVE SYSTEM COMPRISED OF INDIVIDUAL COMPUTERS AT EACH USER TERMINAL, WHICH WOULD BE LINKED TO EACH OTHER THROUGH MODERN DEVICES AND THE DATA TRANSMISSION NETWORK.

4. IT IS UNLIKELY CHINA HAS THE CAPABILITY TO DEVELOP AND MANUFACTURE THE TYPE OF COMPUTER NEEDED IN A SYSTEM  
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SUCH AS THE ONE DESCRIBED BY CH'EN HSUEH-SEN. IT IS ALSO UNLIKELY THEY POSSESS THE CAPABILITY TO PRODUCE THE NECESSARY SOFTWARE AND COMPUTER PERIPHERALS; THEREFORE, THEY PROBABLY WILL RELY HEAVILY ON THE WEST TO SUPPLY MUCH OF THE SYSTEM.

5. IN ADDITION TO THE COMPUTER DATA SYSTEM, CH'EN NOTED THREE OTHER PROJECTS OF PRIME IMPORTANCE TO CHINA'S SCIENTIFIC AND TECHNICAL DEVELOPMENT. INCLUDED WAS THE IMMEDIATE UPGRADING OF CHINA'S SCIENTIFIC INSTRUMENT INDUSTRY WITH SPECIAL EMPHASIS ON INSTRUMENT RESEARCH, TRIAL MANUFACTURE, APPLICATION AND REPAIR. ANOTHER AREA OF IMPORTANCE IS MEASUREMENT AND STANDARDIZATION. CH'EN NOTED THAT WHILE CONSIDERABLE SUCCESS HAD BEEN ACHIEVED IN THIS AREA, THE NEED FOR ACCURACY IN SCIENTIFIC QUANTIFICATION AND NUMERATION COULD NEVER BE OVER-EMPHASIZED. THE LAST PROJECT IS IN THE AREA OF SCIENTIFIC AND TECHNICAL LITERATURE PARTICULARLY IN THE EDITING AND PUBLICATION FIELD, WHICH CH'EN SUGGESTED MUST BE CONDUCTED IN A PLANNED MANNER.

6. COMMENT: THE LACK OF COMMUNICATION AND EXCHANGE OF INFORMATION BETWEEN SCIENTIFIC RESEARCH CENTERS HAS BEEN A MAJOR OBSTACLE TO CHINA'S TECHNOLOGICAL ADVANCEMENT, ACCORDING TO REPORTS FROM WESTERN ACADEMICIANS WHO HAVE VISITED THERE. THE ESTABLISHMENT OF A NATIONWIDE DATA PROCESSING SYSTEM TO SERVE CHINA'S SCIENTIFIC COMMUNITY WOULD BE A MAJOR STEP TOWARD SOLVING THIS PROBLEM. MOREOVER, THE AVAILABILITY OF SCIENTIFIC AND TECHNICAL LITERATURE ON A TIMELY BASIS WOULD ALSO FILL A CURRENT VOID IN CHINA'S SCIENTIFIC RESEARCH EFFORT. THE SCIENTIFIC TEST AND MEASUREMENT INSTRUMENTATION INDUSTRY IS THE LEAST DEVELOPED SECTOR OF CHINESE ELECTRONICS. NEARLY ALL OF CHINA'S ADVANCED TEST EQUIPMENT IS IMPORTED FROM THE WEST OR DEVELOPED AS ONE OF A

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KIND IN A LABORATORY ENVIRONMENT. SIMILARLY, THERE IS AN URGENT NEED FOR A COMMON SYSTEM OF MEASUREMENT AND STANDARDIZATION IN CHINA. RECENT PRESS REPORTS INDICATE THAT STEPS ALREADY HAVE BEEN TAKEN TO ABOLISH THE BRITISH MEASUREMENT SYSTEM IN CHINA AND TO PHASE OUT CHINA'S DOMESTIC DECIMAL-BASED "SHIH" SYSTEM. PLANS ARE TO FULLY ADOPT THE UNIVERSALLY ACCEPTED METRIC SYSTEM OF MEASUREMENT. ALL FOUR PROJECTS NOTED BY CH'EN SHOULD REQUIRE EXTENSIVE WESTERN SUPPORT, EITHER THROUGH TECHNOLOGY EXPORTS OR THE SUPPLY OF EQUIPMENT.

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## Message Attributes

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Margaret P. Grafeld  
Declassified/Released  
US Department of State  
EO Systematic Review  
22 May 2009  
**Markings:** Margaret P. Grafeld Declassified/Released US Department of State EO Systematic Review 22 May 2009